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ENVIRONMENTAL MANAGEMENT DEPARTMENT  
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## INSTRUCTION

ASSAY OF TRU DRUMS BY THE CANBERRA  
MOBILE WASTE ASSAY TRAILERS

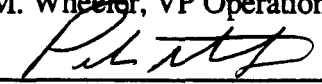
OPS-INSTR.001

Revision 0

Date Effective: June 23, 1997

Approved:

  
M. Wheeler, VP Operations

 6/12/97  
P. Sauer, Building 664 Facility Manager

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### 1. PURPOSE

This instruction ensures the following:

- 1.1 The two Canberra mobile waste assay trailers are operated per approved Canberra operating procedures
- 1.2 Criticality limits of Building 664 are followed during operation of these two Canberra trailers
- 1.3 Drum movements are done per approved Building 664 procedures
- 1.4 Building 664 emergency response procedures are followed by Canberra and support personnel working in the two Canberra trailers
- 1.5 Sources are controlled per approved Health & Safety Practices.

### 2. SCOPE AND APPLICABILITY:

2.1 The scope of this instruction is the following:

- 2.1.1 Operate the two Canberra trailers to assay at least 450 transuranic (TRU) waste drums for Waste Isolation Pilot Plant (WIPP) certification.
- 2.1.2 Move at least 450 TRU waste drums to and from the Canberra trailers and other areas within the Building 664 complex.
- 2.1.3 Control calibration sources per approved Health and Safety Practices (H&SP).
- 2.1.4 Perform work according to 10 CFR 835, Occupational Radiation Protection, and the RFETS Radiological Control Manual.

2.2 This Operations Order applies to Canberra personnel operating the two Canberra trailers and to Building 664 personnel supporting drum movements for assay. This Operations Order also applies to personnel providing support to the TRU Drums WIPP Certification project.

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

ADMIN RECORD

A DW 002410

### 3. JOB PREREQUISITES

#### 3.1 PERSONNEL

- 3.1.1 Canberra operators must have completed the Canberra training before start of assay operations. The minimum requirement is 40 hours of initial training on OSHA Regulation 29 CFR 1910.120(e) or the 8 hours annual refresher course. Training documentation shall be maintained by the Rocky Mountain Remediation Services (RMRS) training group.
- 3.1.2 Canberra operators must have completed the Rocky Flats Environmental Technology Site (RFETS) training requirements specified by the Contract Technical Representative (CTR). These training requirements are General Employee Radiation Training, Nuclear Material Safeguards, Computer Security, and Building 664 Emergency Response Operations. Training documentation shall be maintained by the RMRS training group.
- 3.1.3 RMRS Building 664 support personnel (waste technicians) shall have training per 4-H30-WO-5020, "Handling Transuranic and Transuranic Mixed Waste Packages in Building 664."
- 3.1.4 Canberra operators are not permitted to do hands on work or to handle TRU drums outside the trailers. Building 664 support personnel will load all drums onto the conveyor belt. Canberra operators will remotely move the drums into the mobile assay chamber. Building 664 personnel will handle drums inside the trailers when requested by Canberra operators.
- 3.1.5 A pre-evolution briefing for all personnel supporting this waste assay operations shall take place before actual assay work starts.
- 3.1.6 All personnel shall wear the personnel protective equipment (PPE) required by Radiological Engineering, Industrial Health & Safety, and the Radiological Work Permit (RWP). Minimum required PPE are safety shoes and safety glasses.
- 3.1.7 All RFETS personnel handling TRU waste shall read and understand the Nuclear Material Safety Limits (NMSLs) and the Criticality Safety Operating Limits (CSOLs). Personnel shall complete the NMSL or CSOL Pre-Operational Surveillance Data Sheet according to 4-B19-NSM-03.12, Nuclear Material Safety Limits and the Criticality Safety Operating Limits.

#### 3.2 FACILITY

- 3.2.1 Ensure waste assay operations are approved to proceed on the Building 664 Plan of the Day (POD).
- 3.2.2 Ensure that a current RWP is available and posted at the Building 664 RWP posting area. Ensure that the RWP personnel roster is signed during waste assay activities.

- 3.2.3 Ensure that support personnel such as waste technicians are available to support waste assay as requested by Canberra operating personnel.
- 3.2.4 Ensure that TRU drums to be assayed are staged in the Building 664 complex. A maximum of four TRU drums will be transported to the trailers. These drums shall be transported to and from Building 664 one drum at a time.
- 3.2.5 Drum movements from Building 664 to the Canberra trailers shall not occur during periods of rain, lightning, or high winds. Wet drums moved from the Canberra trailers to Building 664 shall be wiped dry by waste technicians before final storage.
- 3.2.6 Stores of all PPE required to perform the work outlined in this WI shall be maintained at Building 664.
- 3.2.7 Radiological Engineering shall approve radioactive source storage area within the Canberra waste assay trailers.
- 3.2.8 Radiological Engineering shall post the trailers and surrounding area per ROI 1.03, "Radiological Control Posting and Labeling."
- 3.2.9 Ensure that personnel traffic not associated with the waste assay activities are directed to other areas of the Building 664 complex using barrier tape, rope, or other mechanisms.

#### 4. INSTRUCTIONS

- 4.1 Canberra operating personnel shall operate the two Canberra waste assay trailers per Canberra operating procedures SSQM-007, SSQM-008, and SSQM-009.
- 4.2. Canberra operating personnel and Building 664 personnel shall ensure that the following criticality safety controls are observed:
  - 4.2.1 Maximum 200 grams Pu per drum
  - 4.2.2 Only one IDC per drum
  - 4.2.3 No drums containing solution IDCs
  - 4.2.4 No drums containing beryllium IDCs
  - 4.2.5 No mechanically compacted waste drums
  - 4.2.6 No open drums
  - 4.2.7 Drums may be stacked a maximum 4 high
  - 4.2.8 55-gallon drums used for assay must conform to dimensional requirements provided in the RFETS standard SX-200, Issue H.
  - 4.2.9 Maximum of 200 pounds graphite per drum
- 4.3 Building 664 waste operations personnel shall be responsible for movement of TRU waste drums to and from the two Canberra trailers. Movements shall be done per Section 5.2, "Staging the Drums for RTR," of 4-H30-WO-5020, "Handling Transuranic and Transuranic Mixed Waste Packages in Building 664."
- 4.4 Radioactive Source Custodian or designate shall be responsible for controlling radioactive sources per requirements of the RFETS H&SP 18.04, Revision 0.
- 4.5 Canberra personnel shall observe the Health and Safety Plan for TRU Waste Characterization Mobile Systems when operating the two waste assay trailers.
- 4.6 Canberra personnel shall report emergencies and abnormal events occurring at the waste assay site to the Building 664 Manager or designate. Building 664 management shall take actions to protect lives, property, and the environment. Building 664 Management shall follow specific emergency response actions found in Attachments 1-13 of the Building 664 Emergency Response Operations, Revision 0. Canberra shall provide information and support to building management for proper response.
- 4.7 Canberra operators shall disconnect the liquid nitrogen line from both waste assay trailers at the end of each work day.

- 4.8 Changes of empty liquid nitrogen dewars for full dewars shall be handled per H&SP 11.02. These dewar changes shall be coordinated through the RFETS Gas Services by RMRS WIPP personnel.

**5. PROCESS CONCLUSION & CLEANUP**

- 5.1 The CTR shall determine the completion of the assay contract and give orders to restore Building 664 complex to its original condition except for the power supply system. The power pole, transformers, disconnects, and power cables shall be left on the Building 664 complex.
- 5.2 Canberra shall remove all waste materials per instructions from the RCT and Building 664 Facility Management.
- 5.3 RMRS Maintenance or approved personnel shall disconnect the two trailers' power cables from the disconnects located at the power pole.
- 5.4 Canberra personnel shall disassemble the two trailers after being surveyed by a Radiological Control Technician (RCT) and after obtaining a Property Release Evaluation form approved by Radiological Engineering.
- 5.5 Canberra shall remove trailers from the Building 664 complex and the RFETS.

**6. RECORDS**

- 6.1 Records generated by the waste assay operations shall be controlled by the WIPP Project Records Coordinator.
- 6.2 Three controlled copies of this work instruction will be maintained. One master copy will be placed in the WIPP Project files. The second master copy will be placed at the job site in the Building 664 complex. The third master copy will be placed with the RMRS Document Control.

## 7. REFERENCED DOCUMENTATION

- 7.1 Operating and Calibrating the Canberra IQ<sup>3</sup> Gamma Scanner, Canberra Procedure SSQM-007, May 8, 1997.
- 7.2 Operating and Calibrating the Canberra Passive Neutron Counter, Canberra Procedure SSQM-008, April 25, 1997.
- 7.3 Operating and Calibrating the Canberra Segmented Gamma Scanner, Canberra Procedure SSQM-009, April 25, 1997.
- 7.4 Criticality Safety Evaluation, 55-Gallon Drum Storage for Building 664, Evaluation DRP-009, Rev. 0, March 28, 1997.
- 7.5 Health and Safety Plan TRU Waste Characterization Mobile Systems, Canberra Industries, July 1996.
- 7.6 RFETS Health and Safety Practice 18.04, Control of Radioactive Sources, Revision 0, March 18, 1996.
- 7.7 Handling Transuranic and Transuranic Mixed Waste Packages in Building 664, 4-H30-WO-5020, May 10, 1994.
- 7.8 Building 664 Emergency Response Operations, 3-V42-BERO-14.664, Revision 0, March 1, 1996.
- 7.9 4-819-NSM-03.12, Nuclear Material Safety Limits and the Criticality Safety Operating Limits
- 7.10 10 CFR 835, Occupational Radiation Protection.



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RMRS

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INSTRUCTIONS

Effective Date: 6/23/97

Organization: RMRS

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001	Assay of TRU Drums by The Canberra Mobile Waste Assay Trailers	0	06/23/97